

Amendment  
Serial No. 10/754,029

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Docket 5000-1-497

IN THE CLAIMS:

*Please amend the claims as follows:*

1-9 (Canceled).

10. (Currently Amended) An optical add/drop multiplexer connected to an optical fiber for transmission of a multiplexed optical signal, comprising:

a wavelength division multiplexing/demultiplexing (WDM) unit connected to the optical fiber having input and output ports providing a path for a multiplexed optical signal, and a plurality of demultiplexing ports respectively providing paths for demultiplexed channels; and

a plurality of add/drop multiplexer (ADM) units respectively connected to the demultiplexing ports of the WDM unit, each of the ADM units including a circulator adapted to output a channel, input to a higher-order port, to a lower-order port, and a wavelength independent reflector connected between two ports of the circulator, and adapted to pass or reflect a channel input thereto,

wherein the circulator receives a channel at a second port, outputs the channel to a third port connected to the reflector, receives the channel from the reflector at the third port, and outputs the channel to a fourth port thereof, thereby dropping the channel[.].

11. (Original) The optical add/drop multiplexer according to claim 10, wherein the WDM unit comprises:

an end circulator having first through third ports and adapted to output an optical signal, input to a higher-order port, to a lower-order port, the first and third ports of the end circulator connected to the optical fiber for transmission of the multiplexed optical signal; and

Amendment  
Serial No. 10/754.029

Docket 5000-1-497

a wavelength division multiplexer/demultiplexer (WDM) having a multiplexing port connected to the second port of the end circulator and providing a path for a multiplexed optical signal, and a plurality of demultiplexing ports respectively providing paths for demultiplexed channels.

12. (Original) The optical add/drop multiplexer according to claim 11, wherein the WDM comprises an arrayed waveguide grating.

13. (Currently Amended) An optical add/drop multiplexer connected to an optical fiber for transmission of a multiplexed optical signal, comprising:

a wavelength division multiplexing/demultiplexing (WDM) unit connected to the optical fiber having input and output ports providing a path for a multiplexed optical signal, and a plurality of demultiplexing ports respectively providing paths for demultiplexed channels; and

a plurality of add/drop multiplexer (ADM) units respectively connected to the demultiplexing ports of the WDM unit, each of the ADM units including a circulator adapted to output a channel, input to a higher-order port, to a lower-order port, and a wavelength-independent reflector connected between two ports of the circulator, and adapted to pass or reflect a channel input thereto,

wherein the circulator also receives a channel at a fifth port, outputs the channel to a first port connected to the reflector, and receives the channel from the reflector at the first port, thereby adding the channel.

14. (Original) The optical add/drop multiplexer according to claim 13, wherein the WDM unit comprises:

Amendment  
Serial No. 10/754,029

Docket 5000-1-497

an end circulator having first through third ports and adapted to output an optical signal, input to a higher-order port, to a lower-order port, the first and third ports of the end circulator connected to the optical fiber for transmission of the multiplexed optical signal; and

a wavelength division multiplexer/demultiplexer (WDM) having a multiplexing port connected to the second port of the end circulator and providing a path for a multiplexed optical signal, and a plurality of demultiplexing ports respectively providing paths for demultiplexed channels.

15. (Original) The optical add/drop multiplexer according to claim 14, wherein the WDM comprises an arrayed waveguide grating.

16. (Currently Amended) An optical add/drop multiplexer connected to an optical fiber for transmission of a multiplexed optical signal, comprising:

a wavelength division multiplexing/demultiplexing (WDM) unit connected to the optical fiber having input and output ports providing a path for a multiplexed optical signal, and a plurality of demultiplexing ports respectively providing paths for demultiplexed channels; and

a plurality of add/drop multiplexer (ADM) units respectively connected to the demultiplexing ports of the WDM unit, each of the ADM units including a circulator adapted to output a channel, input to a higher-order port, to a lower-order port, and a wavelength-independent reflector connected between two ports of the circulator, and adapted to pass or reflect a channel input thereto without controlling ambient temperature or tension,

Amendment  
Serial No. 10/754,029

Docket 5000-1-497

wherein a channel passing through the ADM unit sequentially passes through the second and third ports of the circulator, the reflector, and the first and second ports of the circulator.

17. (Original) The optical add/drop multiplexer according to claim 16, wherein the WDM unit comprises:

an end circulator having first through third ports and adapted to output an optical signal, input to a higher-order port, to a lower-order port, the first and third ports of the end circulator connected to the optical fiber for transmission of the multiplexed optical signal; and

a wavelength division multiplexer/demultiplexer (WDM) having a multiplexing port connected to the second port of the end circulator and providing a path for a multiplexed optical signal, and a plurality of demultiplexing ports respectively providing paths for demultiplexed channels.

18. (Original) The optical add/drop multiplexer according to claim 17, wherein the WDM comprises an arrayed waveguide grating.

19. (New) The optical add/drop multiplexer according to claim 10, wherein the wavelength-independent reflector comprises a double-sided reflector having a transmissivity varying in accordance with a control signal applied thereto.

20. (New) The optical add/drop multiplexer according to claim 13, wherein the wavelength-independent reflector comprises a double-sided reflector having a transmissivity varying in accordance with a control signal applied thereto.

Amendment  
Serial No. 10/754,029

Docket 5000-1-497

21. (New) The optical add/drop multiplexer according to claim 16, wherein the wavelength-independent reflector comprises a double-sided reflector having a transmissivity varying in accordance with a control signal applied thereto.

22. (New) The optical add/drop multiplexer according to claim 10, wherein a channel passing through the ADM unit sequentially passes through the second and third ports of the circulator, the reflector, and first and second ports of the circulator, and wherein the dropped channel and the passed channel have a same wavelength.

23. (New) The optical add/drop multiplexer according to claim 13, wherein a channel passing through the ADM unit sequentially passes through second and third ports of the circulator, the reflector, the first port, and a second port of the circulator, and wherein the added channel and the passed channel have a same wavelength.

24. (New) The optical add/drop multiplexer according to claim 16, wherein the circulator receives a channel at the second port, outputs the channel to the third port connected to the reflector, receives the channel from the reflector at the third port, and outputs the channel to a fourth port thereof, thereby dropping the channel, wherein the circulator receives a channel at a fifth port, outputs the channel to the first port connected to the reflector, and receives the channel from the reflector at the first port, thereby adding the channel, and wherein the dropped channel, the added channel and the passed channel have a same wavelength.